[Tashkent]

361 town wall, beyond which extend the gardens and fields of the townspeople. On a place elevated naturally or artifically /155/ /Figure 50, p. 10a. Caption: Palace of the Emir of Bukhara./ /156/ inside the town wall, which is not intended to serve as a bulwark against an outside enemy, but as a castle to defend the ruler or commanding officer against any kind of uprising of the subject townsmen. The ruler or govemor therefore always lives in the Urda. (cf. Figure 50, p. 155 and Figure 51, p. 10b, p. 157). From the bazaar square a larger or smaller number of streets lead out in a radial manner through the rows of shops, the houses, and on through the town gates the the outlying gardens and fields to the neighboring villages. Immediately beyond the gardens and fields the dry steppe begins, or the sand or gravel desert, completely without vegetation.

On the basis of the schematic drawing (Figure 49, p. 9a), and taking the climate into consideration, anyone can orient himself easily in any town in Turkestan, without a guide and without knowing a word of the native language, as I myself have proven a hundred times.

Also in Tashkent in earlier days, before the Russian conquest, the main town was surrounded by a high and very strong wall which
333 was made of loess as almost everywhere in Turkestan. For local purposes the loess is the best building material one could wish for. When dry it is as hard as stone, and is therefore very well adapted for the building of walls, because of the extraordinary dryness of the air and the slight precipitation. When dampened with water, however, the loess becomes quite soft and is as easy to work with as ordinary clay. All circular walls, towns walls as well as garden and courtyard walls, are made in the following manner in Turkestan. First, along the place where a wall is to be built, a ditch of the proper width and depth is dug and water is led into it. The earth from the ditch is mixed with straw, and by treading on it with the bare feet it is kneaded into a sticky paste. After this paste has been properly worked, it is piled up on the earth by means of a heavy hoe, used in the field, simply and without any sort of foundation, and is tamped down firmly with the feet. At first only a layer of about 0.6 meters high is laid down, and this is left until it is dry enough to hold the weight of a new layer without its sinking in. Then a second layer of the same height is laid on top, and so it continues until the wall has reached the desired height. The uneven places resulting from this type of building on the sides of the walls are usually eliminated by smoothing over the various layers with the

hoes before putting on a new layer. The direction of the strokes for one layer will be diagonal, from left /157/ to right, and for the next one from right to left, and so forth, from which the walls in Figure 52 (p. 158) retain a marked zigzag effect. /Figure 51. Caption: The palace of the khan of Khiva/ 333 R11a R10a

Considering the nature of the material, the walls must naturally be thicker at the bottom than at the top. The upper edge of the wall is indented, /158/ and it serves partly as decoration and partly provides loopholes for shooting. Inside the town walls runs a platform on which the defenders can place cannons, and on which a person can walk all the way around the entire town. (Figure 53) For the walls continue without any interruption over rivers, canals, and ravines. /Figure 52. Caption: Turkestan town wall. / Therefore the water courses are bridged over with thick beams and on these the walls are built in the same manner as on dry land. The height of the town walls differs according to the terrain, the importance of the place, and the greater or lesser danger of the position. The walls of Tashkent, which are among the strongest, still standing at the time of my visit in 1874, had a height of from four and a half to six meters. Their circumference was about 25 kilometers. /Figure 53. Caption: Turkestan town wall, cross section. / The houses were not built against the town walls, but instead a wide street went around the whole town inside the wall, clearly to facilitate the defense. The gardens and fields nearly all lay outside the town walls, but each of them was likewise surrounded by its own wall, also made of clay. From the basic town twelve gates led out to the gardens and the nearby settlements, and these were usually named after the towns /159/ to which they led, as, for example, the Kokand gate, the Samarkand gate, etc. The arrangement of the town gates is quite a characteristic one in Turkestan. To shoot breaches in a loess wall is very difficult, because thin walls can be easily penetrated by the bullets without causing further damage, whereas from thick walls the bullets ricochet. In attacking a Turkestan town, therefore, the gates must always be stormed. These are therefore always built as solidly as possible. On both sides of the gate, very solid, more or less conical, round towers are built with platforms on which to put the fortification guns (Figures 52 and 54). The gate, provided with these massive wings, leads into a large, high, quadrangular hall, the floor of which is raised about two meters above the road. /Figure 54. Caption: The town gate of Khiva. / In this hall, through which everyone who walks, rides horseback or drives through the gate 712. 361/ R11c R11b R11c